REMARKS

Rejection of the Claims

The Examiner rejected claims 1-2 and 11 under 35 U.S.C. § 102(e) as being anticipated by Cahill et al. (U.S. 5,963,659). Additionally, Claims 3-4 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cahill et al. as applied to claims 1-2 and 11 above, and further in view of Kruppa (U.S. 6,243,504). Finally, the Examiner rejected claims 5-10 and 13-25 under 35 U.S.C. § 103(a) as being unpatentable over Cahill et al. as applied to claims 1-2 and 11 above, and further in view of Grabowski et al. (U.S. 4,408,342 A). The Applicants respectfully traverse these rejections and request reconsideration thereof.

Summary of the Current Invention

Prior to discussing the cited art, the Applicant believes the following summary of the invention will aid in the understanding of the novelty and non-obviousness of the pending claims. The current invention is directed to an analysis method for processing financial documents which have been previously read and deemed to have an invalid MICR line. The financial item analysis method of the present invention is a method for digitally applying character recognition processing to a digital image of the financial item. Thus, the method examines the digital image of the item to identify MICR characters and thereby finds a digital image of the MICR line in the digital image of the item.

The method of digitally applying character recognition processing to a digital image of the financial item disclosed by the pending application provides for the identification and repair of a previously invalidated MICR line. In one aspect, the method provides for changing the orientation of the digital image by digital processing and examining the reoriented digital image for the MICR line. Additionally, the current invention utilizes several templates for reading the

MICR line. The first MICR font template is used to determine if any characters are missing from the MICR line. If characters are missing, then a second MICR font template is applied to identify the missing MICR character. If the use of the second MICR font template does not successfully identify a character at a respective position, a third MICR font template is applied in the particular implementation of FIG. 9. This is an inverse skeleton which is the inverse of the skeleton templates used in the first and second MICR font templates. The method of the current invention is particularly useful for identifying "broken" characters where parts of the character are missing, and would cause the prior two template processes to fail.

If these steps identify the MICR characters, the automatic read method, illustrated in FIG. 8, determines if these characters constitute a MICR line. If the MICR line is deemed to have been read, one or more signals are generated for notifying the controller 62 and the digitally encoded MICR line data is analyzed to determine whether it constitutes a valid MICR line. If it is a valid MICR line, the controller 62 writes that data to the MICR data record for the respective imaged item to replace the original invalidated data. If what has been read is not deemed a MICR line, the financial item becomes a residual invalid item.

§102 Rejection of Claims 1-2 and 11 over Cahill et al. (U.S. 5,963,659)

The Applicant has amended claim 1 to clearly indicate that the digital image of the financial item having an invalidated MICR line is digitally processed to identify the MICR characters within the MICR line. Support for the amendment is found in the specification at paragraphs [0015], [0051] and original claims 6 and 11.

Additionally, the Applicant has added new claim 26 to the pending application. New claim 26 indicates that the current invention provides a method which automatically applies the character recognition process to an invalidated MICR line in a digital image of a financial item.

Support for new claim 26 is found in the specification in paragraphs [0009], [0051], [0052] and [0063] as well as Figs. 8 and 9.

The Examiner's rejection of claims 1-2 and 11 over Cahill et al., U.S. Pat. No. 5,963,659, references column 14, lines 27-30 and col. 18, line 65 through col. 19, line 4 as support for the position that Cahill et al. teaches digitally applying character recognition processing to an invalidated MICR line after the financial item has been sent to a reject pocket. However, the Applicant respectfully submits that the Examiner has misinterpreted the cited sections of Cahill et al.

Column 14, lines 20-35 of Cahill et al. provides a brief description of check routing from hopper 203 to one of eight output pockets, i.e. repair pocket 208, re-pass pocket 209 or normal sort pockets 210. This portion of Cahill et al. does not state that a check is passed to the repair pocket or re-pass pocket due to invalidation of the MICR line. If for any reason a check does not end up in a normal pocket 210, the check is routed to the re-pass pocket 209 and once again placed in the input hopper for the sorter. Details of how the checks are directed to repair pocket 208 are subsequently described in the disclosure.

Cahill et al. describes the relationship of output pockets 208, 209, and 210 at column 17, line 43 through column 20, line 64. According to column 18, lines 20-24, the sorter provides a best read comparison of the data retrieved from the MICR line prior to deciding which output pocket to send the check. Using the best read mode the sorter returns a decoded MICR line with "!" characters replacing any questionable data in MICR line. In the event one or more characters are not decoded by the MICR reader or the OCR device, the check is directed to either the re-pass pocket for reprocessing on the sorter or to the repair pocket for MICR line correction at the repair station.

Referring to column 19, lines 48-61, the re-pass mode differs from normal processing only in the way the checks are handled if the threshold number or more of errors are present. If the

number of errors is equal to or greater than a threshold for the second processing of the check, then the check is stopped and the image is displayed on a console along with the decoded MICR line. At this step the operator decides whether to accept the check or to reprocess the check once again. If the operator accepts the check, it is sent to the repair pocket for processing through the repair station.

The operation of the repair station is described in column 20, lines 15-65. The repair station described by Cahill et al. is not an automated repair station which utilizes different MICR font templates. Rather, the repair station is a manual repair station which allows the operator to enter the necessary data to correct the MICR line. Specifically, as noted in column 20, lines 48-56, check images and the associated data are displayed on the repair station monitor, the repair station examines each of the three data fields that were encoded in the MICR line and highlights the first field requiring correction by the operator. Typically, the first field containing errors is highlighted in reverse video. Thereafter the operator enters the corrected data using the keyboard. Following correction of the first field, the repair station checks for the next field containing errors and the process is repeated until the entire MICR line has been corrected by the operator.

Thus, the Cahill et al. disclosure does not provide a method which repairs or corrects an MICR line by applying character recognition processing to an invalidated MICR line in a digital image of a financial item after the financial item has been sent to a reject pocket of a sorter. Rather, in the Cahill system once a check has an invalidated MICR line, the check is sent to a repair station where an operator manually corrects the MICR line without further digitally processing the check. Finally, as described in paragraph 51 of the pending application, the term digitally applying character recognition processing refers to the method of digitally processing the digital image of the item to identify MICR characters and subsequently finding a digital image of the MICR line in the digital image of the item. Clearly Cahill et al. makes no effort to find a digital image of the MICR

line at the repair station and does not use digital processing to repair a previously invalidated MICR line.

Further, in contrast to new claim 26, the Cahill et al. disclosure does not disclose the automatic application of character recognition processing to an invalidated MICR line. Rather, Cahill et al. is clearly a manual process for correcting the MICR line.

In summary, the Applicant respectfully submits that pending claims 1-2 and 11 are novel and non-obvious over the disclosure of Cahill et al. The pending claims, as amended, provide for the application of a method for digitally applying character recognition processing to an invalidated MICR line in a digital image wherein the digital processing of the digital image of the check identifies MICR characters therein. Cahill et al. neither teaches nor suggests the use of digital processing in this manner. Rather, Cahill et al. provides a manual method for correcting an MICR line. Therefore, the Applicant respectfully requests reconsideration and withdrawal of the rejection of pending claims 1-2 and 11 over Cahill et al.

§103 Rejection of Claims 3-4 and 12 over Cahill et al. in view of Kruppa (U.S. 6,243,504)

Claims 3-4 and 12 depend from independent claims 1 and 11 respectively. In view of the foregoing amendment to claim 1 and the arguments over the Cahill et al. reference, the independent claims are now believed to be in condition for allowance. Therefore, claims 3-4 and 12 are also in condition for allowance. As such, the Applicant will only briefly discuss the Kruppa disclosure.

The Examiner cited Kruppa to provide for the recognized deficiencies of Cahill et al. stating, "Kruppa teaches changing digitally stored MICR line data for the check in response to digitally applying character recognition processing to the invalidated MICR line." In support of the rejection, the Examiner cited col. 8, lines 47-49 and 57-59 of Kruppa. The cited portions of Kruppa do not support the Examiner's position.

The Kruppa method for reading the magnetic ink character string is described in Fig. 3 and at column 7, line 63 through column 9, line 17. The method described therein is essentially a looping method wherein the unreadable checks are continually fed back to the magnetization step 302 for a given number of iterations as defined by the user. Following magnetization of the ink character string, the paper material passes to a read head which magnetically reads the character string and also to an optical reader. According to column 8, lines 32-35, if a magnetic decoding error is identified, then the invention may be configured to perform an optical decoding of the magnetic ink character string. As described at column 8, lines 47-54, if errors occur during the optical decoding step, the process repeats by returning the paper product to the magnetization step. Failures occurring during optical decoding of the magnetic ink character string are tracked. Once the check or paper document has been rejected a predetermined number of times, the check is finally rejected.

In summary, the Applicant respectively submits that Kruppa neither teaches nor suggests a financial item analysis method comprising digitally applying character recognition processing wherein digitally stored MICR line data is changed in response to digital processing of a digital image. Therefore, the Applicant respectfully requests reconsideration and withdrawal the rejection of pending claims 3, 4 and 12 over the combination of Cahill et al. in view of Kruppa.

§103 Rejection of Claims 5-10 and 13-25 over Cahill et al. in view of Grabowski et al. (4,409,342)

Claims 5-10 and 13-25 depend from independent claims 1 and 11 respectively. In view of the foregoing amendment to claim 1 and the arguments over the Cahill et al. reference, the independent claims are now believed to be in condition for allowance. Therefore, claims 5-10 and 13-25 are also in condition for allowance. As such, the Applicant will only briefly discuss the Grabowski et al. disclosure.

The Examiner contends that Grabowski et al., "teaches digitally changing an orientation of the digital image of the check in response to at least one failure of the digitally processing of the digital image of the check to find a digital image of the MICR line (column 3, lines 20-25, 36-48, 54-62; column 4, lines 24-27)." However, the cited sections neither teach nor suggest reorientation of a digital image as described by the pending claims. Rather, Grabowski et al. describe a method for accurately defining the MICR band. This method compensates for skewing of the document as it passes through the machinery but it does not reorient a digital image of the document. In fact, Grabowski et al. never use the terms "orient" or "reorient" with regard reading the MICR line. Therefore, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 5-10 and 13-25 over the combination of Cahill et al. and Grabowski et al.

Conclusion

In view of the foregoing arguments over the rejections of claims 1–25 and the amendment to claim 1, the Applicants respectfully request that the Examiner reconsider and withdraw the rejection of the pending claims. A formal Notice of Allowance of Claims 1–25 is earnestly solicited. Should the Examiner care to discuss any aspect of the foregoing response in greater detail, the undersigned attorney would welcome a telephone call.

Respectfully submitted,

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